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EXAMINER DUFFY, DAVID W				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/735,595

Applicant(s)

KURZWEIL, RAYMOND C.

Examiner

DAVID DUFFY

Art Unit

3716

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. This office action is in response to the amendment filed 01/07/2011 in which applicant amends claim 12. Claims 1-25 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 3-7, 9-11 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 3 includes the limitation "a second humanoid robot, receiving, from the communications network, the motion signals from the motion sensors, the motion signals from the motion sensors causing a movement of the second robot that is correlated to a movement of the body suit." This limitation in concert with the limitations of the preceding claims makes it so the body suit receives tactile signals from a first robot and sends motion signals to the second robot. This method of operation is not disclosed in the specification, which describes one suit receiving information from and controlling the same remote robot. Claims 4-7, 9-11, and 13 inherit this deficiency by nature of their dependency.

4. Claims 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 24 includes the limitation, "a set of goggles having a display, the set of goggles receiving and rendering on the display at least one of the first image of a virtual scene and the second image of a virtual scene". The specification as filed does not disclose the set of goggles of being capable of showing more than one of the respective images. Claim 25 inherit this deficiency by nature of their dependency.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 3-11, 13 and 24-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 1 recites the limitation "the received real-time first image" in the seventh line and "the real-time first image" in the eighth line. There is insufficient antecedent basis for these limitations in the claim.

8. Claim 3 includes the limitation "a second humanoid robot, receiving, from the communications network, the motion signals from the motion sensors, the motion signals from the motion sensors causing a movement of the second robot that is correlated to a movement of the body suit." This limitation in concert with the limitations

of the preceding claims makes it so the body suit receives tactile signals from a first robot and sends motion signals to the second robot. It is unclear how the system would operate with feedback from a different robot than the suit was controlling. Claims 4-7, 9-11, and 13 inherit this deficiency by nature of their dependency.

9. Claim 24 recites the limitations, "overlay a virtual environment over one or more portions of the received first real-time image to form a first image of a virtual scene with the first image of the virtual scene ... and overlay a virtual environment over one or more portions of the received second real-time image to form a second image of a virtual scene with the second image of the virtual scene". It is unclear if the first and second images are being overlaid with the same virtual environment or if each has its own environment and scene. Claim 25 inherits this deficiency by nature of dependency.

10. Claim 24 recites the limitations "first motion sensors disposed over the second mannequin, the first motion sensors sending motion actuating signals over a communication network, and first motion actuators disposed over the second mannequin, the first motion actuators receiving motion sensing signals from the communication network; ... and a body suit having second motion sensors disposed over the body suit, the second motion sensors sending the motion actuating signals to the first motion actuators over the communication network, the body suit further having motion actuators disposed over the body suit, the motion actuators receiving the motion sensing signals from the first motion sensors over the communication network." It is unclear what is occurring as both the first and second motion sensors are sending the motion actuating signals and both the first motion actuators and the motion actuators

are receiving the motion sensing signals. This results in a system where both the robot and the body suit produce and use the exact same signals and not the respective signals generated by the other. Examiner is interpreting the claim in light of the specification which has the suit sending control data to the mannequin and receiving sensor data from said mannequin. Claim 25 inherits this deficiency by nature of dependency.

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claims 1, 12, 14, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee; Albert G. et al. (US 6016385 A) in view of Clapper; Edward O. et al. (US 6752720 B1).

13. In regard to claims 1 and 14, Yee discloses a first mannequin (fig 3), a first camera supported by the first mannequin for capturing a first image of a scene (5:11-13); and a first set of goggles to render a second image of a virtual scene from signals received from a communications network (4:2-5 and 5:13-17). Yee does not explicitly disclose overlaying a virtual environment over one or more portions of the real-time images to form a first image of a virtual scene.

14. In related prior art, Clapper discloses a remotely controlled robot (abstract) that receives real-time imagery from a camera mounted on the remote robot and overlays a virtual environment via a processor (3:60-10, 5:36-46 and figs 5 and 6). One of ordinary skill in the art would recognize the advantages of overlaying a virtual environment over

the real-time camera images of a remote robot to provide a more interesting and entertaining system to the controller of the robot.

15. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee in view of Clapper to have overlaid a virtual environment over the images from the camera using a processor to make a more entertaining and exciting system for controlling the robot.

16. In regard to claim 12, Yee discloses the set of goggles comprises a receiver to receive the image of the virtual scene (5:31-37, the goggles inherently have a receiver to receive the data they are displaying as otherwise they would be nonfunctional).

17. In regard to claim 18, Yee discloses sending first audio signals over the communications network; the first audio signals being produced from a first microphone coupled to the first mannequin and transuding the first audio signals received from the communications network using a transducer embedded in the first set of goggles (4:51-67).

18. In regard to claim 22, Yee discloses wherein the first set of goggles comprises a display to render the first virtual scene (5:11-14).

19. Claims 2 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee; Albert G. et al. (US 6016385 A) in view of Clapper; Edward O. et al. (US 6752720 B1) as applied to claim 1 above, and further in view of Dundon; Michael (US 7046151 B2).

20. In regard to claims 2 and 15, Yee discloses wherein the first mannequin is a first humanoid robot having tactile sensors positioned along the exterior of the first robot, the

sensors sending tactile signals to a communication network and tactile actuators receiving the tactile signals from the communications network (7:49-58). Yee does not explicitly disclose the actuators being in a body suit; rather it only explicitly discloses a glove.

21. In related prior art, Dundon discloses an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile actuators receiving tactile signals from the network (abstract). One of ordinary skill in the art would recognize the advantages of a full body suit to provide complete sensory experience to further Yee's suggestion of providing physical interactions to enable the operator to respond more naturally, more effectively, and more quickly to developing conditions at the robot site (3:15-20).

22. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee in view of Dundon to have incorporated a bodysuit with actuators to provide complete sensory experience to further Yee's suggestion of providing physical interactions to enable the operator to respond more naturally, more effectively, and more quickly to developing conditions at the robot site.

23. In regard to claims 16 and 17, Yee discloses sending motion signals from motion sensors positioned throughout the surface of a human, the motion signals corresponding to movements of each sensor relative to a reference point, the motion signals being transmitted to the communications network; receiving at the first robot the motion signals, and causing movement of the robot that is correlated to a movement of

the human based on the motion signals by motion actuators moving the robot (at least 4:41-50, 5:5-10, and 6:15-41).

24. Claims 3-9, 11, 13, 19, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee; Albert G. et al. (US 6016385 A) in view of Clapper; Edward O. et al. (US 6752720 B1) and Dundon; Michael (US 7046151 B2) as applied to claim 2 above, and further in view of Abbasi; Touraj (US 6786863 B2).

25. In regard to claims 3-8 and 19, Yee discloses the robotic system set forth above, which clearly could be duplicated to have two copies of the system each with robot to provide two total robots, but does not explicitly disclose two robots.

26. In related prior art, Abbasi teaches that remote physical contact using mechanical surrogates, i.e. robots, is desirable to expand on the notion of teleconferencing by adding a capability to engage in all types of physical contact (1:60-63) and would allow for improved medical examinations and improved human contact (1:44-57).

27. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee in view of Abbasi to use the robotic surrogates of Yee in two locations with two robots in order to expand on the notion of teleconferencing and improve human contact and medical examinations.

28. In regard to claims 9, 11, and 21, Yee discloses the communications network comprises an interface having one or more channels for receiving audio signals, first video image, sending signals to the goggles and sending audio signals with the second microphone positioned within an ear canal (4:2-5, 4:51-67, and 5:13-17).

29. In regard to claim 13 and 23, Yee discloses the system of claim 6, wherein the first robot comprises a transmitter to wirelessly send or receive audio, tactile, motion signals and the video images to or from the communications network (6:1-2).

30. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yee; Albert G. et al. (US 6016385 A) in view of Clapper; Edward O. et al. (US 6752720 B1), Dundon; Michael (US 7046151 B2), and Abbasi; Touraj (US 6786863 B2) as applied to claim 7 above, and further in view of Gutierrez; Frederic J. (US 4982281 A).

31. In regard to claim 10, Yee discloses the system of claim 7 above, with cameras located approximately in the position of the face of the humanoid robot (fig 3 and 5:11-13), but does not explicitly disclose the location being in an eye socket.

32. In related prior art, Gutierrez discloses that cameras may be located in the eyes of mannequins in order to hide their appearance (abstract). One of ordinary skill in the art would recognize the advantages of hiding the cameras of Yee in the eye sockets so that it does "not intimidate people, and in fact, be an object of curiosity, functionality, and entertainment for the general public" (Yee, 5:41-49).

33. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee to have placed the cameras in the eye sockets of the humanoid figure in order to hide the camera and not intimidate persons.

34. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yee; Albert G. et al. (US 6016385 A) in view of Clapper; Edward O. et al. (US 6752720 B1) as applied to claim 18 above, and further in view of Gutierrez; Frederic J. (US 4982281 A).

35. In regard to claim 20, Yee discloses the system of claim 18 above, with cameras located approximately in the position of the face of the humanoid robot (fig 3 and 5:11-13), but does not explicitly disclose the location being in an eye socket.

36. In related prior art, Gutierrez discloses that cameras may be located in the eyes of mannequins in order to hide their appearance (abstract). One of ordinary skill in the art would recognize the advantages of hiding the cameras of Yee in the eye sockets so that it does "not intimidate people, and in fact, be an object of curiosity, functionality, and entertainment for the general public" (Yee, 5:41-49).

37. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee to have placed the cameras in the eye sockets of the humanoid figure in order to hide the camera and not intimidate persons.

38. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yee; Albert G. et al. (US 6016385 A) in view of Clapper; Edward O. et al. (US 6752720 B1), Dundon; Michael (US 7046151 B2), and Abbasi; Touraj (US 6786863 B2).

39. In regard to claims 24 and 25, Yee discloses a first mannequin (fig 3), that is a humanoid robot having tactile sensors and tactile actuators (7:49-58), a first camera supported by the first mannequin for capturing a first image of a scene (5:11-13); and a first set of goggles to render a second image of a virtual scene from signals received from a communications network (4:2-5 and 5:13-17). Yee does not explicitly disclose overlaying a virtual environment over one or more portions of the real-time images to form a first image of a virtual scene.

40. In related prior art, Clapper discloses a remotely controlled robot (abstract) that receives real-time imagery from a camera mounted on the remote robot and overlays a virtual environment via a processor to form an image of a virtual scene including at least one remaining portion of the real-time image (3:60-10, 5:36-46 and figs 5 and 6). One of ordinary skill in the art would recognize the advantages of overlaying a virtual environment over the real-time camera images of a remote robot to provide a more interesting and entertaining system to the controller of the robot.

41. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee in view of Clapper to have overlaid a virtual environment over the images from the camera using a processor to make a more entertaining and exciting system for controlling the robot.

42. Yee does not explicitly disclose the first actuators and sensors being in a body suit; rather it only explicitly discloses a glove with tactile sensors and actuators (7:49-8:9).

43. In related prior art, Dundon discloses an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile actuators receiving tactile signals from the network (abstract). One of ordinary skill in the art would recognize the advantages of a full body suit to provide complete sensory experience to further Yee's suggestion of providing physical interactions to enable the operator to respond more naturally, more effectively, and more quickly to developing conditions at the robot site (3:15-20).

44. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee in view of Dundon to have incorporated a bodysuit with actuators to provide complete sensory experience to further Yee's suggestion of providing physical interactions to enable the operator to respond more naturally, more effectively, and more quickly to developing conditions at the robot site.

45. Yee discloses the robotic system set forth above, which clearly could be duplicated to have two copies of the system each with robot to provide two total robots, but does not explicitly disclose two robots.

46. In related prior art, Abbasi teaches that remote physical contact using mechanical surrogates, i.e. robots, is desirable to expand on the notion of teleconferencing by adding a capability to engage in all types of physical contact (1:60-63) and would allow for improved medical examinations and improved human contact (1:44-57).

47. Therefore it would have been obvious to one skilled in the art at the time of the invention to have modified Yee in view of Abbasi to use the robotic surrogates of Yee in two locations with two robots in order to expand on the notion of teleconferencing and improve human contact and medical examinations.

Response to Arguments

48. Applicant's arguments filed 01/07/2011 have been fully considered but they are not persuasive.

49. Applicant argues that there is support for claim 3 in paragraphs 38 and 41 of the printed publication. Applicant has not shown support for what is actually claimed. The

claims as written have a first robot with sensors, a body suit with sensors and then an additional second robot with movement capabilities. As written, applicant's claims have signals sent from the first robot to the body suit which then sends signals to control the second robot. This is not what is described in the very short specification at any point. The specification describes one robot that sends signals to and is correspondingly controlled by a single body suit. Applicant must address what the claims actually set forth and not merely what applicant may intend the claims to mean. Applicant also states that "applicant makes provisions for multiple users, multiple gateways, multiple robots, sensors, suits etc." Examiner points out that nowhere in applicant's specification is it set forth that there are any embodiments or that even suggest, much less outright describe, any number other than two users with corresponding robots and suits.

50. Applicant requests clarification of the rejection of claim 24. Similar to above, the claim sets forth a first virtual scene generated from a first camera's image at a first mannequin and a second virtual scene generated from a second camera's image at a second mannequin. In the context of the claim these are two different virtual scenes from two different sources. The claim then describes a set of goggles that is capable of receiving at least one of, thus implying one, the other, or both as the source for display. Applicant's specification only describes a set of goggles as receiving the corresponding virtual scene not that it is capable of receiving at least one of or both. At no point does the specification describe a user's goggles as receiving images from anything other than the camera associated with that user's mannequin or robot.

51. Applicant requests why "receiving in real time the first image" does not provide antecedent basis. The limitation is, "a first processor receiving in real time the first image". Thus, "real time" is describing when the processor receives the image, not the content of the image. Therefor, "a first image" is not necessarily the same as "the real-time first image" and is unclear. For clarity, applicant should use the same descriptors for terms so that there is no confusion as to which term is intended in the claim.

52. Applicant attempts to clarify for claim 3 the operation of the system for the examiner. However, as pointed out, examiner understands the system, it is applicant's claims that are incorrect as written.

53. Applicant states that the rejection of claim 24 is clearly improper. Examiner disagrees. Applicant has used the same reference, "a virtual scene" twice in the same claim. For the purposes of 35 U.S.C. § 112 second paragraph, this is unclear as to whether there are two virtual scenes or just one. The claims must be clear as far as what limitations correspond to which elements. Applicant should either refer back to the same virtual scene or label the virtual scenes as first and second or similar so that one reading the claims understands them clearly. Examiner has also clarified in the rejection above exactly how applicant's claims fail to describe a system as set forth in the specification in a clear and operational manner.

54. Applicant again argues that one of ordinary skill in the art would not have combined Yee with Clapper. Applicant continues on to claim that Yee would not work because, "an operator would be misled by the virtual scene and would not be able to take appropriate actions to control the robot." Examiner disagrees. Clapper clearly

teaches that it is possible and desirable to overlay virtual scenes with remotely piloted robots. Just as in Yee, the operator of Clapper is remotely controlling a robot and is more than capable of doing so with the overlay on the remote real time image. Clearly, the system of Yee would not be inoperable or malfunctioning as applicant alleges by incorporating the overlay feature of Clapper as Clapper is functional and differs from Yee only in the shape of the remotely controlled robot.

Conclusion

55. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID DUFFY whose telephone number is (571) 272-1574. The examiner can normally be reached on M-F 0830-1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dmitry Suhol can be reached on (571) 272-4430. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dmitry Suhol/
Supervisory Patent Examiner, Art Unit 3716

/D. D./
Examiner, Art Unit 3716